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Case No: HT-2018-000376 and HT-2019-000002

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
TECHNOLOGY AND CONSTRUCTION COURT (KBD)

Royal Courts of Justice, Rolls Building
Fetter Lane, London, EC4A 1NL

Date: 07/03/2023
Date Offered to the Parties: 13/2/23

Before:

HIS HONOUR JUDGE PELLING KC
SITTING AS A JUDGE OF THE HIGH COURT

- -

Between:

(1) D.I.P.T. LIMITED
(2) JOINERY FIT-OUT SUPPLIES LIMITED
(3) PROTRADE LIMITED **Claimants**

- and –

SANGLIER LIMITED **Defendant**

And Between:

SANGLIER LIMITED

Claimant

- and –

APOLLO CHEMICALS LIMITED

Defendant

- -

Dermot Woolgar (instructed by **DAC Beachcroft LLP**) for the **D.I.P.T Parties**
Paul Fisher (instructed by **Browne Jacobson LLP**) for the **Sanglier Limited**
Carlo Taczalski and **Michael Harper** (instructed by **Keoghs LLP)** for **Apollo Chemicals Limited**

Hearing dates: 26, 27 and 31 October, 1, 2, 3, 9, 10, 14, 15, 16, 17, 21, 22, 23 and 28 November 2022

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Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

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HIS HONOUR JUDGE PELLING KC SITTING AS A JUDGE OF THE HIGH COURT

HH Judge Pelling KC:

Introduction

1. This was the trial of two claims (referred to respectively hereafter as the "*2018 claim*" and the "*2019 claim*") concerning a product liability dispute about a glue consisting of a liquid adhesive manufactured by Apollo Chemicals Limited ("*Apollo*") which it named "A8660" and sold to Sanglier Limited ("*Sanglier*"). Sanglier mixed the A8660 with a propellant which it packaged in 17 Kg pressurised aluminium canisters for application by spraying using a hose and spray gun and in 500 ml aerosol cans, in each case for onward sale, using the trade name "PRO33 NFA". I refer to the adhesive manufactured by Apollo and sold by it to Sanglier hereafter as "*the adhesive*" and to PRO33 NFA as "*the product*".

2. The parties to the 2019 claim were Sanglier as claimant and Apollo as defendant. Sanglier discontinued the 2019 proceedings by agreement with Apollo after the end of the trial and indeed after part of this judgment had been written. I refer hereafter to the 2019 claim only for the purpose of providing some context. I will not determine any of the issues that arise in the 2019 claim other than to the extent they are also issues that arise in or overlap with issues that have to be decided in the 2018 claim. All this means of course that the trial was much longer than would have been necessary had the claim only been one between the DIPT claimants and Sanglier. A significant amount of the time at trial was taken up with the highly technical organic chemistry issues that arose as between Sanglier and Apollo. All those have dropped away. It means that this judgment will now be substantially shorter than would otherwise have been the case.

3. By not discontinuing earlier, Sanglier has added significantly to the length of the trial and therefore to the public resources that have had to be made available to try it and to the expense faced by the parties and in particular by the claimants, who were not and never had been parties to the 2019 claim but were forced to attend a trial that was significantly extended in length by the inclusion of the 2019 claim. It has meant that I have had to seek supplemental submissions from the parties to the 2018 claim as to the impact of the discontinuation of the 2019 claim on the issues that have to be determined in the 2018 claim. This has necessarily delayed completion of this judgment, as has the need to re-write parts that had already been written by the time of the discontinuation. It is unfortunate that Sanglier chose not to discontinue the 2019 claim much earlier.

4. The product was a member of a family of industrial adhesives known as "Pressure Sensitive Adhesives" or "PSAs". Such products are used to bond laminates to substrates so as to create composite materials for use in the construction of internal furniture and fittings for installation in shops, offices and exhibition stands. PSAs may either be sold to be applied by hand or in a sprayable format to be applied either from large volume canisters using spray guns or from aerosol cans. The product was a sprayable PSA.

5. Sprayable PSAs are applied by spraying both the surface of the substrate and the surface of the laminate, then leaving both for a period (known as the "open time") to allow the solvent to evaporate before pressing the glued surfaces of the laminate and substrate together in order to bond them and thus create the composite material. Once bonded, the resulting composite material can be machined with ease as required. Typically, to

work satisfactorily, such adhesives need to be applied horizontally to one of the surfaces and vertically to the other. Bonding is brought about usually using hand-held rollers. Typically, if properly applied, such products will provide a bond that will last for approximately 10 years.

6. The product was a newly formulated sprayable PSA that was designed to offer advantages in application over other PSAs then on the market. It was sold by Sanglier from January 2013 until it was withdrawn by DIPT in March 2014, following wide-spread complaints by end users of premature debonding of laminates from substrates bonded using the product, leaving a dry friable powdery residue. I am satisfied (indeed it was I think common ground) that the product failed in this way either because it suffered excessive aggressive oxidation or destabilisation caused by contamination that caused it to lose its adhesive qualities. The main technical dispute in this case was between Sanglier and Apollo as to the chemical cause of this process but it is not any longer necessary for me to resolve that dispute. The debonding complained of occurred within less than a year of application of the product.

7. Sanglier sold the product to (i) Blu Sky (UK) Limited ("Blu Sky") and (ii) Zettex Europe BV ("Zettex"), a distributer based in the Netherlands. Blu Sky is not a party to these proceedings since it has assigned its claims against Sanglier to the first claimant in the 2018 claim ("DIPT"). No point has been taken by either Sanglier or Apollo concerning the effect of this assignment as a matter of principle.

8. Blu Sky sold the product on to DIPT, which then supplied it on to Joinery Fit-Out Supplies Limited ("JFS", the second claimant in the 2018 claim) and Protrade Limited ("PL", the third claimant in the 2018 claim), two companies within the same group as DIPT. The dealings between DIPT, JFS and PL are somewhat obscure but it is common ground that either DIPT sold the product it purchased from Blu Sky to JFS and PL or purchased the product from Blu Sky as agent for them. Nothing turns on this in these proceedings. DIPT, JFS and PL are the claimants in the 2018 claim and are referred to collectively hereafter as "DIPT" or the "DIPT claimants".

9. JFS and PL sold the product on to various end users in England and Wales including each of the test end users to which I refer below. The end users were shop and office fitters and other construction industry contractors, who used the product to join laminates to substrates, typically MDF sheets, which were then used by the end users to construct office furniture, shop fittings, exhibition stands and in other internal panelling applications. Zettex marketed the product in Europe as "X40" and sold it on to various sub distributors including principally Süd-Metall Beschläge GmbH ("Sud-Metall") which in turn sold it on to end users who used it for broadly the same purposes as the end user customers of JFS and PL.

10. Following complaints of premature de-bonding from the end user's customers, numerous claims were received by the DIPT claimants (and Sud-Metall) from end users in respect of remedial work carried out or to be carried out following the premature de-bonding of laminates manufactured using the product. Ultimately the claims directed to the DIPT claimants were settled by DIPT and its insurers with the assistance of Sedgwick, acting as adjusters. Zettex advanced similar claims against Sanglier in respect of claims received by it from its customers. Those claims were settled by Sanglier. The Zettex claims have ceased to have any material relevance to these

proceedings since they featured only in the discontinued claim by Sanglier against Apollo.

11. In the 2018 claim, the DIPT claimants allege against Sanglier that the product was sold by Sanglier in breach of the terms concerning quality implied into contracts for the sale of goods by s.14 of the Sale of Goods Act 1979 because it was allegedly neither of satisfactory quality nor reasonably fit for its intended purpose. They claim damages consisting of the total that was paid to end users to settle claims by the end users in respect of remedial and other losses that they claimed to have suffered or would suffer as a result of using the product. The total number of contractors who made claims that have been settled by DIPT comes to 37 and the total amount paid out to £2,115,379.62. There is an additional claim by the DIPT claimants for loss of business and profits totalling £493,598, for other associated losses qualified in the sum of £71,000 odd and for the costs of dealing with claims by end users, quantified at £282,000 odd. These additional claims are not the subject of this trial.

12. Sanglier denies those claims and maintains that the failures were not caused by use of the product at all but by the use of other products or, if the product was used, were caused by defective workmanship on the part of the end users and in any event it challenges the reasonableness of the settlements reached between the claimants and the end users.

13. In the 2019 claim, Sanglier had claimed against Apollo declarations that it was entitled to recover from Apollo part of any sums it is liable to pay DIPT in the 2018 claim on the basis that the adhesive that Apollo sold to Sanglier was neither of satisfactory quality nor reasonably fit for its intended purpose. It also claimed as damages the sums that it paid to Zettex to settle end user claims made up the supply chain to Zettex, which it quantified in the sums of €476,000 and €467,000 and various costs incurred in investigating the claims by the claimants and Zettex. In the alternative it claimed damages for breach of an alleged duty of care to develop and manufacture the adhesive with reasonable care and skill or for a contribution in respect of any liability it may have to the claimants in the 2018 claim under the Civil Liability (Contribution) Act 1978.

14. Apollo had denied those claims. It adopted Sanglier's allegations of non-use of the product by end users, defective workmanship and unreasonable settlement. It also, primarily, denied that the adhesive suffered from any relevant defect and alleged that the product was defective as a result of a chemical destabilisation / separation of the adhesive caused by impurities left on the internal surfaces of some (but not all) of the 17 Kg canisters in which Sanglier packaged and supplied the product. The canisters were supposedly cleansed by the manufacturer of the canisters (Amtrol-Alfa Metalomecanica SA ("Amtrol-Alfa")) of chemicals used in the manufacturing process, by an automated industrial process that involved the use of solvents, which ended with the mechanical flushing of the canisters with re-circulated water to cleanse them of the solvents used in the cleaning process.

15. Apollo alleged that this part of its case derived circumstantial support from the fact that not all laminated composite materials manufactured using the product failed and (so it alleges) no failures occurred (or at any rate there was no evidence of failures occurring) in composites manufactured using adhesive applied from aerosols as opposed to

canisters. It had maintained that none of the technical explanations offered by Sanglier met these points. Apollo also relied on its standard terms as limiting its liability even if otherwise it would be liable to Sanglier.

16. All these issues are issues that I no longer need to consider and so not do so. In particular, if I am satisfied that the product was inherently defective, it is no longer necessary for me to engage with the detailed, contentious and voluminous expert evidence concerning the cause of that defect.

17. The trial of the 2018 claim has proceeded by reference to 6 test case DIPT end users (collectively referred to hereafter as "test end users") being:

    i) 3G Joinery and Shopfitting Limited ("3G Joinery");

    ii) BAPTT Shopfitters Limited ("BAPTT");

    iii) Christian Mobey Limited ("Christian Mobey");

    iv) IDX Corporation London Limited ("IDX");

    v) Jonathan Carey Design Limited ("Jonathan Carey"); and

    vi) Plumline Bespoke Joinery Ltd (in liquidation), ("Plumline").

    The total amount claimed by DIPT in respect of these test end users is £1,225,590.50.

18. The trial took place on 26, 27 and 31 October, 1, 2, 3, 9, 10, 14, 15, 16, 17, 21, 22, 23 and 28 November 2022. I refer to the transcripts of each of these hearing days hereafter as T1 to T16 respectively. I heard evidence from:

    i) Mr Desmond Duddy, the joint managing director of the third claimant in the 2018 claim ("Protrade");

    ii) Mr Mark Fitzsimmons, the managing director of Blu Sky;

    iii) Dr John Ashworth. A Polymer chemist and director of John Ashworth & Partners Limited, to whom the claimants and Blu Sky turned initially following the receipt of complaints concerning the product;

    iv) Mr Daron Lawry, a joiner carpenter employed by BAPTT

    v) Mr Graham Ward, the now retired former head of Complex Liability at Sedgwick, the firm of loss adjusters who acted on the instructions of the DIPT claimants and their insurers in the adjustment of the end user claims including those of the test end users;

    vi) Mr Richard Clark, a director of Christian Mobey;

    vii) Mr Simon Beasley, formerly the former managing director of Plumline;

    viii) Mr Stephen Dent the Operations Director of Jonathan Carey;

ix) Mr Michael Odgers, a loss adjuster employed by Sedgwick, who acted on the instructions of Mr Ward in relation to the adjustment of the end user claims including those of the test end users;

x) Mr Philip Murphy, a complex liability loss adjuster employed by Sedgwick who also acted on behalf of DIPT in relation to the adjustment of the end user claims including those of the test end users;

xi) Mr Nigel Davies, the managing director of Sanglier;

xii) Mr Adam Hitchcott, the managing director of BAPTT;

xiii) Mr Michael Standfest, the works manager of Manigatterer GmbH, an end user that purchased the product from Sud-Metall;

xiv) Mr Herbert Persterer-Resch, the managing director of Sud-Metall;

xv) Mr Roland Waidele, the managing director of Waidele Joinery Company, a purchaser of the product from Sud-Metall;

xvi) Mr Ian Cornelius, at all material times the managing director of Apollo;

xvii) Ms Sandrina Matos, a quality manager employed by Amtrol-Alfa, the manufacturer of the cylinders into which Sanglier packaged the adhesive together with propellant to create the product;

xviii) Mr Howard Marshall, a founding director of Sanglier from 2002 until he retired in 2017;

xix) Mr Guy Cooper, the sales director employed by Apollo;

xx) Mr Martin Penton, at all material times the technical and innovation director employed by Apollo;

xxi) Mr Stephen Pitt, a product manager employed by Apollo;

xxii) Mr Iman Braal, the managing director of Zettex;

xxiii) Mr Darrell Tibbins, the Director of Technical, Quality assurance & Compliance employed by Apollo;

xxiv) Dr Ian Wadsworth, a partner in the firm of Dr JH Burgoyne & Partners and materials failure expert who gave evidence on behalf of the claimants;

xxv) Professor Bamber Blackman PhD., DIC, B.Eng., ACGI, IMechE who gave expert materials failure evidence on behalf of Apollo;

xxvi) Professor Ivan Parkin, Ph.D., FRSC, C. Chem., BSc (Hons)., ARCS, DIC, FIMMM, C. Sci, MAE., Dean of the Faculty of Mathematical and Physical Sciences at University College London, who gave expert materials failure and organic chemistry evidence on behalf of Sanglier; and

xxvii) Dr Robin West, BSc., MSc., Ph.D., C Chem., FRSC, an Independent Consultant in organic chemistry, who gave expert organic chemistry evidence on behalf of Apollo.

Of these, the evidence given by those witnesses referred to in (xiii) to (xxii) and (xxvi) to (xxvii) above is no longer relevant to any issue that I have to decide following the discontinuance of the 2019 claim by Sanglier.

19. As will be apparent from the outline summary of the issues that arise set out above, these claims are concerned with events that took place in excess of 8 years ago. Inevitably this has an impact on the reliability of recollection of the witnesses of fact who gave evidence, a number of whom had been retired for significant periods prior to the start of the trial. In those circumstances, I have tested the oral evidence of each of the witnesses of fact, wherever possible, against such contemporary documentation as there is, admitted and inconvertible facts and inherent probabilities. This is an entirely conventional approach – see Onassis and Calogeropoulos v. Vergottis [1968] 2 Lloyds Rep 403 at 407 and 413. It is of course necessary to consider all of the evidence – see Kogan v. Martin [2019] EWCA Civ 164 per Floyd LJ at paragraphs 88-89. There is however nothing either in this authority or the requirement to consider all of the evidence that prevents the evaluation of oral evidence using the techniques I have referred to. In my judgment the use of such techniques is all the more appropriate having regard to the passage of time since the events with which this case is concerned – see Gestmin SGPS SA v. Credit Suisse (UK) Limited [2013] EWHC 3560 (Comm) per Leggatt J (as he then was) at paragraphs 15-22.

20. Where I have concluded that a witness of fact gave oral evidence that I cannot safely rely on, I make clear at this stage that this is not because I consider any of those witnesses have set out to mislead me but simply because their lack of recollection by reason of the passage of time is such that I cannot safely rely on what they say other than to the extent their evidence is corroborated by reliable evidence or is admitted or is contrary to their interests or those of the party adducing their evidence. Rather than attempting to explain why this is so as a freestanding element of this judgment (particularly since much of the contentious factual evidence has either become irrelevant or markedly less significant following the discontinuation of the 2019 claim) I explain below how and why I have come to these conclusions by reference to the events that are material to resolution of the 2018 claim.

21. Prior to the discontinuation of the 2019 claim, I had structured this judgment by referring first to the three purely factual issues that arose before turning to the technical issues and issues of law that arose in relation to the 2019 claim. Since it is no longer necessary for me to consider those issues, it is necessary that I consider only the three factual issues being (i) Sanglier's case that in some cases at least the end users concerned were not using the product when they experienced the alleged premature debonding; (ii) Sanglier's case that such premature debonding as occurred was caused by defective workmanship on the part of the end users and their employees and (iii) Sanglier's case that the settlements by DIPT and Sanglier were unreasonable because they failed to take any account of either of these factors.

(i) The Issues Concerning Use of the Product

22. Sanglier submits that the DIPT claimants have not proved that the glue being used by the end users who complained of premature debonding were using the product when the alleged debonding occurred.

23. In substance, Sanglier submits that there is evidence that other adhesives were being used by the test end users apart from the product. If that is to be of any significance, what has to be established is not merely that the end users were using adhesives other than the product at the material time but also that delaminations of the same type and at the same level were experienced when using such products as were allegedly experienced when using the product.

24. To an extent there is an element of artificial technicality about this issue. It was submitted on behalf of Sanglier that I should conclude that this claim failed on this basis because the end users " … *have been unable to supply the batch numbers used by any of the DIPT Contractors that made claims making it impossible to identify with any precision which failed laminates are directly attributable to the Product…*" – see paragraph 19 of Sanglier's written closing submissions. In my judgment, this is entirely unreal. Had this been a claim concerning components for use in the repair and maintenance of public transport certified aircraft for example, this approach would have been justified. However, the product was an industrial adhesive used in a low tech, low cost applications in connection with shop, office and exhibition stand fit outs, where speed of production and cost (and therefore price) control were key commercial considerations. This is entirely unregulated activity at least in any relevant sense. There is no legal or other obligation to obtain or retain such records. In those circumstances it is entirely unreal to expect end users of such materials to keep this sort of information and equally unreal to conclude that in the absence of such materials a claim of this sort must necessarily fail. Such material may well have assisted in proving the claims but its absence does not mean that DIPT has failed to prove its claims. This point is exacerbated by the period of time that has elapsed and that at least one of the end users has entered liquidation.

25. Determination of this issue therefore depends largely upon the recollection of witnesses of events that would not necessarily have appeared significant at the time and which occurred many years ago. The other general factors that I judge to be material to an assessment of this issue are that (i) there is no evidence of any widespread premature debonding issue affecting any other sprayable adhesive used in applications of the type for which the product was used either during the material (or otherwise apart from a product available years earlier in 2011, which it is common ground was defective) and (ii) there is significant evidence that where failures occurred where the product had been used, typically it resulted in the residue of the product turning to a dry friable powdery substance entirely different from workmanship failures where what was left was a tacky stringy residue. The powdery residue is the result of the oxidation process (and / or the destabilisation of the components within the adhesive) referred to earlier and its existence points to the use of the product rather than to other products where premature debonding has been caused by poor application techniques. All that said, it is necessary to consider this part of the case by reference to each of the test end users.

IDX

26. I am satisfied that in the period between 11 April 2013 and 28 November 2013, IDX purchased a total of 76 canisters of the product from JFS. This is what is set out in the witness summary for Mr Mike Prime who was at all material times IDX's production manager. Whilst he did not in the end give evidence, this element of what is set out in his witness summary reflects the documentation that has been disclosed and is not in dispute. IDX made 69 claims in respect of failed shop fitting work carried out not only in the UK but across Europe. Ultimately IDX's claims came to a total of £259,596.24 and were settled were settled at £132,167.19 together with legal costs of £11,500.

27. In common with all the test end users, Sanglier maintained that there was evidence that IDX did not use the product. In my judgment this suggestion is one I must reject. First, as I have said, the documentation to which I have referred (consisting principally of invoices) demonstrates that it was purchasing the product during the relevant period. Secondly, unlike most if not all the other test end users, IDX instructed solicitors who commenced proceedings. Indeed, the claims made by IDX were settled by means of a Part 36 offer. In its Particulars of Claim it alleged it had purchased and used the product, which had resulted in delaminations requiring remedial work. The Particulars of Claim contained a statement of truth signed by one of IDX's directors. It is inconceivable that a company such as IDX would purchase the product but then not use it. There is no evidence as I have said repeatedly of the use of any sprayable adhesive other than the product resulting in the widespread cohesive failure or of failures leaving the powdery residue to which I have referred. The failures of which IDX complained resulted in such failures with such symptoms. None of the samples provided by IDX (including those provided by it to Sanglier) that were examined scientifically were found to be of an adhesive other than the product.

28. I am satisfied from this material that the DIPT claimants have proved that at all material times IDX was using the product exclusively. This of course says nothing about how the material was used to which I turn below.

3G Joinery

29. I find that 3G Joinery purchased a total of 26 canisters of the product between no later than 22 July 2013 and 10 February 2014. Whilst no witness evidence was adduced from any of the directors or managers of 3G Joinery, I am able to make this finding because it reflects what is set out in the relevant invoices. 3G Joinery received complaints of premature delaminations at a total of 6 sites and submitted claims in the total sum of £289,000 odd which were adjusted to and settled at £230,757 odd. Three of the claims - Brynmoor Jones Library at Hull University, Bradford College and York Engineers Triangle were settled first in the sum of in the sum of £88,681.26. The balance of the claims – those in respect of Sheffield University Student Union Bar, SASAR Edinburgh Student Union and Calverley Building at Leeds Beckett University were settled nearly a year later, in the sum of £142,076.03. Sanglier alleges that 3G Joinery did not use the product the invoice evidence establishes 3G Joinery purchased to make any of the items which were installed at any of the 6 sites, or in the course of the works which were carried out at any of the 6 sites. I reject that submission for the following reasons.

30. As I have said already, no other sprayable adhesive is alleged to have caused premature and widespread delaminations during the relevant period accompanied by hardening, embrittlement, loss of tack and powder formation as was the case with failures when the product was used. The presence of these features is of itself evidence that the product was the adhesive that was being used. Numerous samples of the failed laminations were taken at the time. None have been tested by the defendants for the purpose of establishing that some other product was being used.

31. The relevant work was carried out during the period when 3G Joinery was purchasing the product. It is inherently improbable that 3G Joinery would be purchasing the product whilst using another or other adhesives for the purpose of bonding laminates to substrates. There is no evidence that 3G Joinery was using any other adhesive during this period and the loss adjuster who negotiated the claim (Mr Ward) investigated this issue to the limited extent set out in paragraph 32 of his witness statement that is:

> "All of the customer claimants were asked if they had used any other contact adhesive on any of the contracts that they had worked upon and they all used solely the Adhesive. We were able to confirm this to an extent by obtaining copies of the invoices for the Adhesive."

This, together with the timing and the contents of the invoices and the absence of any evidence suggesting that other adhesives were being used during this period, satisfied me on the balance of probability that 3G Joinery used the product on the projects in respect of which they made claims. Whilst I accept that the legal burden rested throughout on the DIPT claimants to prove their case on the issue I am now considering, Sanglier would bear an evidential burden in respect of any positive case it wished to run on this issue. It could have but did not adduce any evidence that suggested any of the failures relied on by 3G Joinery involved the use of adhesive other than the product.

32. Some reliance was placed by the defendants on the fact that two of the projects that were the subject of claims was commenced in March or April 2013 but the first invoice for the product is dated in July 2013. The difficulty with a submission of this sort is that there is no evidence of what work was being done at what dates nor when the product was first supplied by Sanglier to 3G Joinery. I accept that the product was probably supplied prior to the date of the invoice but when is not something I can identify on the evidence available.

33. This submission was advanced by Apollo by reference to the contents of the Scott Schedule. The work referred to by Apollo is for what is referred to in the Scott Schedule as sub claims 1 and 4. Sub claim 1 is alleged to have been in respect of a project commenced in April 2013. However, that does not lead to the conclusion that the work that failed was carried out then. Sub claim 4 is said to have been in respect of an installation that took place in March 2013. This is an allegation. It is not proof. Those dates do not appear as far as I can see in the loss adjusters' file and the terms of the settlement agreement do not contain those dates either.

34. This issue is one that I resolve in favour of the claimants because Sanglier has not established that the work was carried out and completed on the dates it alleges. If that is its positive case, then it bears the evidential burden of proving the work was carried

out and completed on the dates alleged. I accept that product could have been supplied before the date of the invoice but after the date when on the balance of probability the lamination work that is relevant had been completed but there is no evidence that supports such an inference. In any event, there is no evidence that demonstrates any other sprayable adhesive available at the relevant times (much less one being used by 3G Joinery) failing in the manner that it is alleged the product failed – that is by premature debonding leaving behind a dry dusty friable residue.

35. Sanglier can have no complaint about my resolution of this point because Mr Woolgar in the course of his oral submissions made clear that he had not been able to work out where the dates relied on by the defendants had come from – see T16/11/4-7. It was for the defendants to make good on their positive case as to the date when the relevant work had been carried out and they have not done so.

Plumline

36. The invoice evidence suggests, and I find, that Plumline purchased 141 canisters and 72 aerosols of the product between not later than 28 March 2013 and 10 March 2014. Plumline made a total of 85 claims in two tranches with the first being made in December 2014 with a total value of £135,525 odd and the latter in November 2015 with a total value of £18,525 odd. These claims were settled respectively for £75,525 odd and £18,232 odd respectively. Plumline entered liquidation in October 2018.

37. By the start of the trial, it was accepted that Plumline had used some of the product but was otherwise non specific. Before turning to the evidence at trial, I repeat the point I have made a number of times already – there was no other sprayable adhesive in use duringthe relevant period that suffered the widespread cohesive failures that were suffered when then product was used, or which failed leaving the white/light yellow powdery residue to which I have also referred already. In this connection it is worth noting what Mr Beasley (who was Plumline's managing director until the company was placed in liquidation) says in his witness statement when he inspected a branch of Curry's where premature delamination had occurred. His evidence concerning that visit was:

> "Our customers were extremely dissatisfied with the defective displays. Following one of the first complaints we received from Alrec, I personally visited a local Currys in Netherfield to see the issues. I had never seen anything like it. The surface that we had glued on to the MDF had completely fallen off. There was a residue which remained on the Adhesive side of the MDF and substrate which was a white powder with a chalky consistency. In my opinion it was almost as if an ingredient was missing out of the Adhesive or there was too much of one ingredient."

Thus Mr Beasley's evidence was that Plumline did not have any delamination issues with the other adhesives it used and had not encountered such issues prior to starting to use the product. During the period it was using the product, Plumline did not use any other spray adhesives. This is significant because it demonstrates that the failures experienced were unique and with symptoms that are specific to the cohesive failures of bonds made using the product. I should add that Mr Beasley's evidence was that:

> "… use of the [product] and the associated claims ultimately led to Plumline going out of business. The value of our claim was approximately £153,000 but we only received approximately £93,000 in settlement."

38. Sanglier's case in relation to Plumline on the issue I am now considering depends on what it maintains to be the defective oral evidence of Mr Beasley. In summary, I am urged to conclude that the DIPT claimants' case in relation to Plumline should fail because Mr Beasley's evidence was unsatisfactory to a high degree. Before going further, I should make clear that I do not regard Mr Beasley as being a witness who was seeking to deceive me. His business had been placed in liquidation and the events with which this claim is concerned took place many years ago. He cannot be expected to have perfect or anywhere near perfect recall of dates and other matters of detail, particularly in relation to an issue in which he can have no direct interest.

39. In those circumstances, I reject the submission of Sanglier that any useful conclusion can be reached from Mr Beasley's confusion as to when Plumline first began purchasing the product – a point given particular emphasis in paragraph 26(b) of Sanglier's closing submissions. The reality is this: it is a matter of record from the invoices within the trial bundle that from 28 March 2013 to 10 March 2014, Plumline bought 141 canisters and 72 aerosols of the product from the second claimant. There is thus no doubt (contrary to the implied submissions of Sanglier in its closing submissions) as to when and what quantity of the product was purchased by Plumline.

40. Further, I am satisfied that the work in respect of which claims were made by Plumline was carried out during the period when it was purchasing the product. Nowhere has it been suggested much less proved that during this period there were other adhesives that had failed prematurely on a widespread basis in a way which featured hardening and embrittlement of the sort that was a feature of the failure of the product. There is no evidence adduced by Sanglier that suggests any of the failures relied on by Plumline involved adhesives other than the product whether by scientific analysis of samples from failed panels or otherwise.

41. If and to the extent that it is suggested that Plumline (or any of the other test end users) purchased the product but then didn't use it, I reject that submission as inherently improbable. As Mr Woolgar put it in his closing submissions:

> " … the DIPT test case contractors did not buy all that PRO33 simply to decorate the racks of their storage rooms. It really must be plain as day that they used all of it, save, as I say, for what would have been a very small proportion immediately before the middle of March 2014, in the course of their works."

I accept of course that the DIPT claimants' case on this issue is an inferential one but in my judgment all these factors taken together – that the product was purchased during the period when the relevant work was carried out combined with the absence of any evidence of widespread premature bonding failures associated with any other relevant products and the particular symptoms of the failures associated with the product coupled with the absence of any scientific evidence associating the failures of which complaint was made with any other adhesive is sufficient to establish the use of the

product in relation to the failures that occurred and which formed the basis of Plumline' claims.

42. Some reliance was placed by Sanglier on Mr Beasley's acceptance that Plumline used another spray applied PSA called Maxitek Sprayweb. There is a debate in the evidence as to when the use of that product overlapped with Plumline's use of the product but that is not the point for present purposes. There is no evidence that implicates that product in widespread premature bonding failures that manifested itself in the way in which it is alleged failures involving the product manifested itself. I fully accept that there may be a workmanship issue that arises – I turn to that issue below – but in my judgment the DIPT claims have proved that Plumline used the product in the failed projects in respect of which it made claims.

BAPTT

43. I find that BAPTT purchased 32 canisters and 17 aerosols of the product from JFS between 25 February and 26 September 2013. I reach that conclusion because Mr Hitchcott's evidence to that effect (which I accept) is corroborated by the invoices included in the trial bundle. It received complaints of delamination at 20 sites and submitted claims with a total value of submitted claims which ultimately totalled £303,231.95 that were adjusted to and settled for were settled at £278,986.70 in six stages as remedial works progressed. The product is alleged to have been used by BAPTT on a project it carried out at the Royal Opera House, Covent Garden.

44. At the start of the trial, Sanglier alleged that none of the projects on which BAPTT based its claim (spread over 20 sites) involved work carried out using the product. I have no difficulty in rejecting that general submission, essentially for the reasons already mentioned in relation to the other test end users so far considered.

45. BAPTT purchased a substantial quantity of the product and I infer it is more probable than not that it would have used the product it purchased in the course of its business. The witness statement evidence of Mr Hitchcott was that no other canister adhesives were used during the relevant period and Mr Lawry said that he recalled using the product and that it was the policy of BAPTT not to use different brands so as to avoiding mixing them. I accept this evidence. Similarly, I reject the case advanced by Apollo (to the extent that it was adopted by Sanglier) that numerous sub-claims should be excluded on the basis that projects or the work in respect of which premature delamination was experienced was done prior to the date of the first invoice. I do so for the same reasons identified earlier in relation to part of the claims made by 3G Joinery. I do not intend to further lengthen this judgment by repeating the same points. It is worth repeating what Mr Lawry said in his witness statement. It is worth noting that he has worked for BAPTT for in excess of 20 years and in the shop fitting business for over 34 years and has used sprayable adhesives for between 15-20 years. He was heavily involved in the remedial works and stated:

> "The failed adhesive caused absolute carnage. I have never seen anything like it before in my life.
>
> …

> I also remember visiting the Royal Opera House in London, and BAPTT had manufactured the laminated units in the gift shop. All of the back panels of the units were falling off, and the clothes rails were holding the laminate in place. It was getting to a point where if the laminate did fall off, it would have been a danger to people.
>
> 27. The failed Adhesive looked like a white crystallised powder.
>
> 28. All of the joiners in the BAPTT team went to different sites around the country to repair the damage caused. It was very stressful for all of the joiners, and it had a massive impact on the business.
>
> 29. The replacement units were all manufactured using a different adhesive. We also had to travel to the different sites
>
> 30. Myself and the other longest serving joiners at BAPTT have been joiners for a very long time and we have never had any issues with canister adhesives before or since."

I accept this evidence. It provides strong support for the DIPT claimant's case that this end user used the product and experienced widespread and unprecedented failure when doing so. I conclude that this evidence supports the contention that BAPTT used the product because it demonstrates that no sprayable adhesive before or since has failed in the manner that the product failed and it failed in a way that was unique in the experience of Mr Lawry because of the extent of the failures and the powdery residue left behind. Given the absence of any evidence of an adhesive causing widespread failures of the sort described other than the product I conclude that this evidence supports the case that it was the product that was being used.

46. There is some scientific evidence that is consistent with this conclusion at least inferentially. Scrapings taken from samples of failed laminates were subjected to specialist spectroscopic examination. It was not suggested the adhesive so tested was not the product. More tellingly, in May 2014, Dr Ashworth carried out a scientific comparison of a sample of adhesive taken from a Royal Opera House bonding failure with a sample of the product (without propellant) supplied by Sanglier. Dr Ashworth's conclusion was that " … *there is a high probability that all five degraded adhesives originated from Sanglier A8660P3*". In my judgment this establishes on the balance of probability that it was the product that was being used by BAPTT at any rate on that project. The point that the adhesive was soft and resinous as opposed to being brittle and yellow is not one that goes to the use of the product but may point to an issue concerning the way it was applied in that particular case. It is not therefore a point that is material to the issue I am now considering.

47. A report obtained by Apollo in June 2014, from LPD Lab Services Limited compared some samples of failed bonds obtained from BAPTT with the product. The conclusion reached was that:

> "The spectra of the adhesive collected from the laminate samples supplied by BAPTT (figure 4) all appear to share significant

> similarities to the dried adhesive spectra. From that analysis the adhesive that failed on those particular laminate samples appears to have been A8660 adhesive product. ”

And that:

> “ … the samples of failed laminates supplied from BAPTT' appear to be consistent with the use of a typical A8660 adhesive system.”

Apollo’s own investigations came to broadly similar conclusions. The document containing those conclusions was signed by Mr Penton, Apollo’s technical director. It stated that *“(t)he failed samples supplied by BAPPT did show good correlation between it and A8660 …”* It is not suggested that this material is not admissible in relation to the 2018 claim.

48. This material satisfies me (when considered together with the general points already made in relation to the other test end users already considered) that on the balance of probabilities BAPTT used the product on each of then projects where bonding failure was experienced. Whether this can be explained as being the result of poor workmanship or a defect in the product is something I consider below. On the issue I am now considering the DIPT claimants have established their factual case.

Christian Mobey

49. I find that Christian Mobey purchased 20 canisters of the product from C2, between 11 April 2013 and 15 January 2014. I reach that conclusion because Mr Clark’s evidence to that effect (which I accept) is corroborated by the invoices included in the trial bundle. Christian Mobey received complaints of delamination at 38 sites where it maintains it used the product. It submitted claims with a total value of £123,716.52, which were adjusted and settled by a payment of £103,618.62 by means of a single Settlement Deed dated 30 June 2015.

50. As opened, Sanglier maintained that Christian Mobey did not use the product at any of the 38 sites in respect of which it made complaints of premature delamination. As to this point, the product was purchased by Christian Mobey within a window within which the works generating the complaints were carried out. That, in combination with evidence from Mr Clark that:

> “At the time, we were not using any other Adhesives. We swapped from Tuskbond[1] to the [product], and we would not have used different adhesives at the same time.”

Together with the general points considered in relation to all the other end users so far considered, this provides ample evidence that the product was used on the relevant project unless that evidence was undermined either in cross examination of Mr Clark or by scientific or other contemporaneous documentary evidence. Some reliance was placed on the fact that there is a single email suggesting that Christian Mobey was also purchasing another sprayable adhesive at the same time as it was purchasing the

[1] Another brand of PSA sold by Sanglier.

product. If this was an allegation that Sanglier seriously wished to advance then it should have been explored in disclosure but was not. In my judgment the point remains the one already considered – there is no evidence of widespread failures using Tuskbond or any other sprayable adhesive during the material period apart from the product. There is no evidence that any of the failures experienced by Christian Mobey were in respect of mouldings using Tuskbond and no evidence of any other widespread cohesive failures by anyone else when using Tuskbond.

51. As to scientific evidence, Apollo placed some reliance on a report of 13 June 2014 by Dr Ada May of LPD Laboratory services limited. Dr May did not give evidence. I assume that Sanglier adopts this approach. In that report Dr May considered two samples provided by Christian Mobey described in the report as "*K234-16 Purple laminate*" and "*K234-17 Purple laminate - lab sprayed*". Following a spectroscopic examination, Dr May concluded that:

> "The laminates from 'Christien Mobey' (figure 4), appear to illustrate that the adhesive on the purple laminate (that was sprayed in the laboratory) is consistent with dried A8660 product. However, the adhesive from the purple laminate (that that was not sprayed in the lab) does not appear to be consistent with the dried A8660 product."

This evidence is relied on as undermining Mr Clark's evidence.

52. DIPT's response is that findings by a test house commissioned by Christian Mobey were consistent with the product having been used. On the assumption that what had been identified to the test house by Mr Clark as being a bond made using the product (described as incorporating an adhesive with a primrose yellow colour), then the findings are consistent with a failure resulting in a loose powdery residue within the delaminated bonded joints of the sample provided. This was in distinction to the Tuskbond sample which was tested and was said to be still bonded with rubbery strings visible when attempts were made to sperate the laminate from the substrate to which it had been bonded. Spectrographic examination of the sample said to have been bonded using the product revealed that it was composed of a styrenic type material. This is consistent with the material being the product.

53. In order to work, PSAs retain a permanent tack. That gives rise to the stringiness observed in relation to the bond between the laminate and substrate said to have been made using Tuskbond. The bond said to have been made using the product did not disclose any tackiness but was said to consist of " … *a light yellow powder which had a brittle, friable consistency. Chemical analysis confirmed that that the yellow powder was mainly polystyrene. It was noted that there were a few small pink particles included. One of these was analysed separately and was also found to be polystyrene based*." This is consistent with the material being the product because that was what was typically found where it failed. I say nothing at this stage about workmanship defects. That is logically separate from the issue I am now considering. This material is consistent with Christian Mobey having used the relevant product at the time.

54. This was consistent with Mr Clark's evidence in cross examination, which was that previous failure using another brand of adhesive left a "*... bubble gum bubbly you know*

tack" whereas when the product failed, " … *it changed consistently. You know, it turned to a powder* …" – see T5/48/13-14. As Mr Clark added: " *...(a)ll the stuff that we replaced had all the same characteristics. It was all powdery and fell off*." – see T5/ 49/7-8. Later in answer to a question from me, Mr Clark said this:

> " … You keep referring to this dust issue as though that is significant and you said in answer to an earlier question when it was put to you that there were errors of application and you said yes, but it was turning to dust. What are you asking me to infer from the fact that it had turned to dust?
>
> A. The glue that should have been where it was when you see something peel apart, you're supposed to see the bubble-gum effect. There was dust.

- See T5/ 88/8-15.

55. In relation to the issue I am now considering (whether the product was used on the projects where premature failure was experienced) Mr Fisher suggested to Mr Clark that what was treated by the test house as the product was not the product at all. The following exchange took place:

> "Without them actually having sight of either of the material safety sheet or the TDS it's very difficult for them to know they were testing PRO33 NFA at all?
>
> A. Did we -- we sent them samples, I believe, didn't we? Yes. Well, we wouldn't have sent them anything else, because that would just be daft.
>
> Q. Yes. But it's very difficult for them to undertake any kind of analysis as to what product they're actually seeing in those failed laminates?
>
> A. Well, they would have seen it was what we gave them and we would have no reason not to give them, you know, the PRO33.
>
> Q. You assumed it was PRO33?
>
> A. Well, I know it was PRO33 because it came off the product and failed.
>
> See T5/ 51/24-52/19.

Later in his cross examination, the following exchange took place:

> "Q, Is there any risk here that the product that was applied was not in fact PRO33?
>
> A. No, not at the time we were doing the shops, when we were originally spraying, you know, the original refit.

- See T5/58/20-23.

Although Mr Fisher maintained that Mr Clark's evidence on this issue was flawed because it was based on an assumption, I reject that. His evidence was that the product was used on the projects where widespread premature failure resulting in a powdery deposit occurred and the implicit suggestion that the sample that was sent to the test house was not in fact one where the product had not been used is one I reject. It is a proposition, as Mr Clark said, that was "*daft"* unless it was being suggested that a sample was submitted which Mr Clark knew consisted of a composite made from an adhesive other than the product. I reject any such suggestion. In my judgment Mr Clark was anxious to get to the bottom of the problem, was anxious to demonstrate the failure was not a workmanship issue and with that in mind would obviously send for testing material bonded using the product. Nothing in this suggests that Christian Mobey was not using the material at the time and I reject any suggestion to contrary effect. The workmanship issue is something I turn to later.

56. In relation to Apollo's case that the product failed in some cases but not others and therefore the probable explanation was workmanship defects, there was the following exchange between Mr Taczalski and Mr Clark:

> "MR TACZALSKI: Where we have misapplication in the form of especially a failure to consolidate[2], and a failure to picture frame[3], and a failure to put enough adhesive down, whether or not the glue was good it would have come apart anyway, wouldn't it?
>
> A I can't say yes or no, but I can only go, again, back to previous years of using Tuskbond, and nothing has ever happened like that before.
>
> Q. Okay. But we are agreed that it was possible to form a durable bond with this adhesive where you, for example, had to chisel it off?
>
> A. Yes.

- see T5/92/23-93/9. The significance of the last exchange for present purposes is that Mr Clark is being clear that it was the product that had been used to create the composite panels that it had failed in a way that was unique in Mr Clark's experience. That some worked but sometimes it did not was consistent with Apollo's technical case as to the reasons for failure. This evidence shows that where failures occurred it was the product that was being used and failing, not that different products were being used at the same time.

57. Mr Taczalski then returned to Apollo's theme that the product was unlikely to have been used at the beginning and end of the window within which it purchased the product because there would be quantities of glue used previously left that would have to be

[2] Press the substrate and laminate together with sufficient force to cause the two to bond.
[3] The spraying technique by which adhesive was sprayed round the periphery of the surface being sprayed as well as either vertically or horizontally across the surface being sprayed.

used up. The evidence from Mr Clark does not persuade me that was so, and I accept his evidence that he had no recollection of the precise position. His evidence is that there would hopefully be some glue in hand when new glue was delivered but could not be specific because it depended on how much work was being undertaken at the relevant time. I am not prepared to conclude that a random amount of work carried out after delivery of the product to Christian Mobey should be excluded on this basis.

58. On the totality of the evidence considered above, I am satisfied on the balance of probabilities that the product was used by Christian Mobey in the manufacture of the composite materials that were the subject of its claims that form the basis of the DIPT claimants claims in these proceedings.

Jonathan Carey

59. There does not appear to be any dispute and I find that that Jonathan Carey purchased 13 canisters and 39 aerosols of the product between February 2013 and December 2014. This was the evidence of Mr Dent and is corroborated by the invoices included within the bundle. It received 14 complaints of delamination at sites where items constructed using the product had been used. It carried out remedial work at those sites and claimed the direct cost in respect of that work. In addition, Jonathan Carey's solicitors claimed significant consequential losses. The total sum claimed exceeded £1.6m. In the result all its claims were settled by a single payment of £375,000.

60. Again, it was alleged by the start of the trial that with two exceptions the product had not been used by Jonathan Carey at any of the sites in respect of which claims came to be made or in any event the delaminations that occurred were the result of misapplication. I am satisfied on the balance of probabilities that Jonathan Carey used the product in the manufacture of the items that generated its claims. In reaching that conclusion I infer that was so because the relevant composite panels were manufactured in the window during which Jonathan Carey was purchasing the product and no other adhesive was implicated in widespread premature failures during that period. Mr Dent's evidence was that no other canister supplied PSAs were being used during the relevant period. Sanglier admit that the product was used for products installed at two sites during the relevant period - site 2 (Leeds City College) and site 10 (Samlesbury Hotel in Preston). It is entirely unclear why the product would be used on two sites but not the remainder. In its closing submissions, Sanglier did not maintain its case that the product had not been used on the other claim sites – see paragraphs 43-45 of its closing submissions.

61. Apollo on the other hand maintained that at the margin, there were some projects that could not have been completed using the product. It is arguable that I should ignore this now that the claim between Sanglier and Apollo has been discontinued. In case this is wrong I consider these submissions at this stage however.

62. Apollo submitted that:

> " … the many furniture items for sub-claims 2 (for which Jonathan Carey charged the customer £102k) were completed in July 2013. This cannot have been completed using the Product. At that time Jonathan Carey only had 1 or 3 aerosols (it is unclear), which is unlikely to be sufficient for the works carried

> out. Jonathan Carey's initial purchases of Product were: 1 or 3 aerosols in February 2013 [F1/182] and 1 canister at the very end of July 2013 [F1/260] (followed by another 4 or 8 aerosols [F1/267] plus 1 more canister [F1/269] in mid-Aug 2003)."

Mr Dent was cross examined on the basis that two different canister adhesives were being used at the material time but Mr Dent was clear that Jonathan Carey was not working in this way – see T6/54/8-17. An opportunistic attempt to suggest otherwise failed – see T6/57/20-58/7. I accept Mr Dent's evidence. That evidence is consistent with there being only one adhesive that was causing widespread delamination during the relevant period and doing so leaving the dry powdery residue to which I have referred above.

63. Mr Dent's evidence was that laminating is the last part of the manufacturing process – see T6/62/19 and following. It is difficult therefore to gauge with any degree of accuracy and certainly with the accuracy necessary to conclude that a particular job was completed before the window in which the product was being received opened, when any particular lamination task was started or completed. Mr Dent did accept that it was unlikely that large scale laminations could have taken place prior to 25 July 2013:

> "MR TACZALSKI: Can we look at F1/260/1. This is the particular invoice that we're talking about and it's the date tax point 25 July '13. And we've got on this invoice clerk's next day carriage so in all probability this is being raised at the point of despatch at the earliest -- rather at the latest, isn't it?
>
> A. I couldn't answer that.
>
> Q. But what we can agree on is anything manufactured before 25 July plus a couple of days perhaps is not gonna have been manufactured using the PRO33 adhesive because you wouldn't have used aerosols to spray that surface area?
>
> A. No, not for such a vast surface area, no. You might do it to do some smaller edgings but you wouldn't spray a big surface because you wouldn't get consistency."

That said, I am not prepared to conclude that this leads to the conclusion that any part of the claim made by Jonathan Carey should be rejected on that basis. The basis for this submission by Apollo is what is set out in an email from Jonathan Carey's insurance brokers dated 19 August 2014 in which in relation one of the projects that was the subject of a claim the brokers stated:

> "Detailed below are four separate projects undertaken by our Client dating from July 2013 to December 2013, all involving the use of the PR033NFA adhesive. All projects involve de-laminating of both laminate and ABS edgings, with all problems manifesting sometime after manufacture and installation.
>
> 1. Leeds City College. This was a contract for the manufacture and installation of 18 screens with a value to us of £102,000.

> Installation was completed in July 2013, and first problems reported around January 2014. Problems involve ABS edgings coming away from doors and screens, and de-laminating of sink units … ."

I do not accept that this is necessarily inconsistent with when product was delivered in the absence of a concession to that effect in cross-examination. There was no such concession. Absent clear evidence that the product was delivered after the work had been carried out it would be wrong to reject a claim where there were no other adhesives being used at the time that resulted in widespread failures.

The Issues Concerning Correct Application of the Product

64. Sanglier accepts that failures occurred but maintains (in the case of the DIPT claims) that this is because the product was misapplied by employees of the end users concerned. This necessarily involves deciding how the product ought to have been applied, which in my judgment must necessarily start with the instructions that were provided to end users. It must also depend on what could reasonably be expected of those using PSAs applying reasonable care and skill. All this must be viewed in the context emphasised throughout by Mr Woolgar that no other canister supplied adhesives available at the material time were implicated in premature and widespread delaminations with loss of tack, yellowing and powder formation that is consistently identified by the claimants as being symptomatic of failure of bond when the product had been used – see the end user evidence already referred to above in relation to use of the product. It is also worth noting that had the level of failure been consistent with failures due to workmanship failure using other adhesives it is inherently improbable that the complaints giving rise to the settlements and these claims would have been made. Further, it is inherently improbable that failures at the level experienced when using the product (resulting in remedial works by individual end users costing very significant sums and very significant stress to both managers and employees) were what would ordinarily be experienced given that the end users were apparently successful businesses that had been operating for many years. In reality, claims at this level could not be sustained by such businesses as part of their ordinary course of trading as is apparent from the effect, for example, of these events on Plumline. That suggests that either defective workmanship had no role to play in what occurred or if what occurred was the result of the manner in which the glue was applied, the failures occurred because of a particular sensitivity of the product to the way it was applied.

65. For the reasons set out below, I conclude that no instructions were given by Sanglier concerning the manner in which the product was to be used that were materially different from instructions given and the techniques used for the application of other spray-applied PSAs, nor were the end users of such products expected by Sanglier to use any techniques not used in the application of other spray delivered PSAs. In my judgment this has a determinative impact on the case advanced by Sanglier that all or a significant number of the failures experienced were failures caused by defective workmanship rather than a defect in the product given the context set out above.

66. As I have said (and it is not in dispute) PSAs have been in use in the relevant sectors of the construction industry for many years. None of the end users who gave evidence before me were new entrants into the market nor is it alleged that any of their employees

who used the product in the course of the end users' businesses were novices in the use of such products or approached the use of the product in any materially different way from that used in the application of other spray applied PSAs. That being so, it is inherently improbable that failures due to poor workmanship could explain the widespread failures that in fact occurred.

67. There is no evidence which enables me to carry out an analysis of the level of failure experienced by end users using the product compared and contrasted with failures in earlier (or for that matter later) years using PSAs other than the product. However, I am confident that if the level of failure that occurred in this case had occurred in relation to lamination processes involving spray applied PSAs other than the product, then the defendants would have known about it (given their commercial prominence in the industrial adhesive market) and would have adduced evidence to support such a conclusion since, if the magnitude of failure experienced was similar in respect of all PSAs, that would point circumstantially towards the defects being the result of workmanship rather than product defects. It is a signal feature of this case that there is no such evidence. This is a startling omission given the time and expense that has been expended in defending these claims. On the evidence, the only similar experience of widespread lamination failure resulted from the use of a product known in these proceedings as the AFT/Bostik product in 2011. That aside, there is no evidence of widespread lamination failure when using PSAs, much less ones resulting in the powdery residue that is consistent with extreme oxidation and which is consistently described as being present when end users inspected reported premature delaminations. I infer from that such evidence has not been adduced simply because it does not exist.

68. There is nothing in the material supplied to end users by Sanglier that suggests any technique was required in relation to the use of the product that was different from that applicable to other commonly available spray applied PSAs. The directions for spraying were set out on the canisters by Sanglier in these terms:

> "Substrates to be bonded should be clean and free from moisture, dirt, oil, and other contaminants. Hold spray gun at a distance of around 100 millimetres from the substrates, producing a web pattern with minimal overlap. The adhesive should be applied at a coating weight of 25 to 30 dry grammes per square metre, or 80% to 100% coverage. Allow the adhesive to dry properly before bonding. When applying to porous materials, it may be necessary to apply two coats. Apply the first coat and allow to dry. This will act as a sealer. Allow adhesive to dry properly to ensure that the adhesive does not soak in below board fibre and that you have the proper amount on the surface to achieve a strong permanent bond. To check for dryness use the back of your fingers and press into the adhesive and lift up. Any adhesive transfer or legginess indicates that the adhesive requires more time to dry. If the adhesive feels tacky but there is no transfer or legginess, the adhesive is ready for bonding. Do not use the palm of your hand to check for dryness. Drying time can vary depending on temperature, humidity, and coating weight. Bonds can be made as soon as the adhesive is dry. However, bonds made anytime in the one hour open time will be as strong as those

> made immediately after dry. Use good uniform pressure to ensure good film fusion. Use roller to apply pressure without damaging the substrates. The completed panel can be machined immediately."

The technical information sheet supplied by Sanglier with the product was to broadly similar effect. Under the heading "*Application"* the technical sheet stated:

> "1. Surface to be bonded, should be cleaned, dry and free from dust and grease.
>
> 2. Substrate should be conditioned before assembly. This is particularly important with laminates. Condition for 48 hours at 20 degrees C with a relative humidity of 45 to 55%. Air should be able to circulate freely round the components.
>
> 3. Connect the hose to the canister and the spray gun to the hose and tighten the Connexions.
>
> 4. Open the valve on the canister. The valve should remain open until the canister is used up. Use the locking nut on the gun after use. Turning off the valve will result in the adhesive drying in the hose and gun causing blockages.
>
> 5. Hold the spray gun at 90 degrees to the surface and apply uniform generous coat of adhesive, ensuring 80 to 100% coverage.
>
> 6. Move the gun in parallel to the surface and pay particular attention to the edges.
>
> 7. Do not allow the adhesive to puddle as it can cause an unevenness that can "show" through the laminate
>
> 8. On porous surfaces it may be necessary to apply a second coat. Always apply to the laminate first and spray one substrate horizontally and the other vertically."

69. It is not in dispute that these instructions were largely generic and standard for all PSAs applied using canisters and sprays. In particular, all such products including the product have to be applied to both surfaces, in one case vertically and the other case horizontally, across at least 80% of the surface of both the laminate and the substrate. The coat weight was no different from that used for other PSAs and there was no expectation (because there was no reasonably practicable means for measuring) that the weight of the coat applied would be as specified, or would be uniform across all surfaces to which the product or any PSA was applied. This was left to the operatives using the product to judge based on experience. The method recommended for deciding when the two surfaces were ready to be bonded (touch) was again standard. No instructions were given to the effect that the product was specially sensitive to any particular element of the application technique. Indeed, the product had been designed to reduce or eliminate application difficulties.

70. In my judgment the factors I have so far considered make it inherently improbable that the primary or main cause of the failures of which complaint was made was poor workmanship and inherently probable that the product failed because of a propensity to extreme and accelerated oxidation due either to an error in formulation of the adhesive or the presence polluting chemicals in the containers into which the product was packaged by Sanglier. As Mr Woolgar put it at paragraph 43 of his closing submissions, " *…possibly the most striking feature of this case is that only PRO33 failed, and not PRO33 together with the range of other competitor adhesives which were being used in the joinery and shopfitting trades at the same time*".

71. The required application techniques were tried, tested and generic with there being no evidence of bonding failures of the scale that occurred when the product was used, nor evidence of complaints to suppliers concerning premature debonding of the level experienced in relation to the product or of the dry powdery residue that was present wherever premature debonding occurred. The product was applied using familiar and uncomplicated equipment that was also used to apply other spray applied PSAs. Whilst there will no doubt be cases where the product was applied otherwise than it ought reasonably to have been, there is no reason to think that the incidence of such occurrences would have been greater in relation to lamination processes using the product than it would have been when using any other PSA. If there was something in the nature of the product that made it particularly susceptible to failure unless used in a particular way, it was for the supplier to make that clear. Sanglier (and for that matter Apollo) did not do so.

72. Added support for this analysis is provided by the fact that where delamination occurred the adhesive was seen to have become hard or had been reduced to a dust or powder or could be easily reduced to that state on examination. In my judgment on the balance of probability this could have occurred only as a result of defects in the chemistry of the product, occurring either by reason of the way in which the adhesive had been manufactured by Apollo or packaged by Sanglier. There is no evidence that suggests other sprayable adhesives failed in this manner either on the widespread scale that occurred when the product was used or otherwise. I have no difficulty therefore in accepting DIPT's submission that it would be "*... staggeringly unlikely ...*" that " … *suddenly when taking up PRO33, and only when using PRO33, many if not all of the joiners and fabricators employed by the DIPT Test Case Contractors forgot en masse how to use sprayable PSAs in a proper and workmanlike manner …*"

73. In this context I also accept DIPT's submission that the evidence of Mr Marshall was helpful on this issue. He was independent of Sanglier because he had been retired for some time prior to giving evidence. If and to the extent he was interested in supporting Sanglier, his evidence on this issue was contrary to its interests. Either way, there is no reason for me to conclude that his evidence on this point was anything but entirely credible. At T9/186 and following, Mr Woolgar cross examined Mr Marshall by reference to the technical material referred to above and on the basis that the product was similar so far as its applications requirements were concerned to other PSAs. It was in that context that the following exchanges took place:

> "Q. Now, PRO33 was in these various respects no different from the other contact sprayable adhesives that your company or other companies produced at the time.

A. No.

Q. One would, therefore, expect experienced applicators who had successfully applied PSAs of this kind in the past to have equal success applying PRO33?

A. Yes.

Q. If they used the methods of application to which they were accustomed, and in which they were experienced, then one would not inherently expect them to experience failures?

A. No.

Q. Would you agree that the product is easy to apply?

A. Yes.

Q. That it's easy to wait for the solvent to tack off[4]?

A. Yes.

Q. And it's easy to consolidate?[5]

A. Yes.

Q. And it would be fair to say that you at Sanglier did not expect by any means the problems that you in fact encountered with --

A. Absolutely, no.

Q. And the problems in short that you've experienced are out of all proportion with any other PSA which you have supplied before or since?

A. Yes."

In my judgment this last answer, which I accept, renders highly implausible the notion that the failures experienced by end users using the product were caused by workmanship defects. However, before reaching a final conclusion on the issues I am now considering, it is necessary to consider a submission made by Apollo and adopted by Sanglier that only between 5 and 10% of the product sold by Sanglier resulted in failures. If this submission could be made good, it might provide some inferential support for a submission that the failures that occurred could be explained by workmanship defects although such a submission leaves out of consideration the circumstantial points to which I refer above and the absence of any evidence as to the

[4] The process by which both surfaces are left exposed to the air for period (known as "open time") to enable the solvent necessary to enable spray application to evaporate so as to enable the coated surfaces to be joined or bonded together.
[5] The process by which a laminate coated with adhesive is joined or bonded to a substate that has been coated with adhesive following an appropriate "open period".

level of failure experienced when using other sprayable adhesives (other the AFT/Bostik product, which had ceased to be available after 2011).

74. It is necessary to be clear what is meant by failure in this context. It is common ground that adhesives or at any rate adhesives of this type will fail eventually. The consensus arrived at in this case was that failure could be expected after about 10 years. The failures that occurred when the product was used ranged from a few weeks to up to a year, but most occurred between 3 and 6 months after bonding. It was common ground that (assuming proper application) delamination should not have occurred within such a time frame.

75. As the end user summary set out earlier shows, widespread failures with broadly similar symptoms in terms the remaining residue were experienced by multiple different end users on multiple different sites both in England and Wales and elsewhere in Europe. That of itself makes it inherently improbable that the explanation lies in defective workmanship both because of the absence of such failures when using other sprayable adhesives and because of the wide range of end users and employees involved.

76. Apollo relied on its point that failures occurred in some but not all cases where the product was used to bond laminates to substrates for two logically distinct purposes. Firstly, it was submitted such a pattern made it more likely than not that the failures were the result of workmanship rather than manufacturing defects. Secondly, it was relied on as undermining the evidence of Professor Parkin (down to the point when he gave oral evidence) that the failures were the result of defects in the manufacture by Apollo of the adhesive consisting of either including insufficient anti-oxidant and/or the inclusion of an excessive amount of Dertophene T110 (one of the main constituent elements of the product), which was vulnerable to oxidation in the absence of effective anti-oxidant cover within the product in which it was used. In essence the point made by Apollo is that if these theories were correct then the product would have failed universally as and when used, and not intermittently as it maintained was the position. For the reasons I have explained it is no longer necessary for me to resolve the second of these points. However, it is worthwhile pointing out at this stage that the second of these points does not depend on the failures being as low as Apollo suggested and Sanglier adopted. Anything other than universal failure within a matter of months of application would provide real support for this submission. As between Apollo and Sanglier it was the second of these two points that really mattered.

77. DIPT challenges Apollo's reasoning on the basis that " … *(i)t is impossible to know precisely what proportion of the canisters which were sold were ultimately used, and it is impossible to know what proportion of those which were used were subsequently implicated in delaminations* …", because Apollo's case on this issue ignores the very large quantities of product that was returned unused after the decision had been taken by Sanglier to cease offering the product for sale; because what level of failure as a proportion of total bonding work undertaken was experienced by each test end user was not explored by either Sanglier or Apollo in the course of the evidence or otherwise; and because it was likely that not every delamination resulted in a claim. This led DIPT to submit that " … *Apollo's estimate that just 5-10% of the Product was implicated in delaminations is flawed, and worthless*".

78. In my judgment that is to forensically exaggerate the point. As Mr Woolgar accepted in his oral closing submissions, it was correct for present purposes to consider all the cases rather than simply the sample cases. He accepted that settlements were made with only 37 out of a total of 116 customers who purchased canisters of the product from Sanglier and that represented 32% of the whole. The 37 however purchased 778 canisters being 65% of the total sold. Mr Woolgar nonetheless accepted that his concessions somewhat diluted his case on this issue. In my judgment he was right to do so. However, in my judgment, even allowing for these concessions, the point made by Apollo and adopted by Sanglier does not lead to the conclusion that the failures that occurred would not have occurred but for defective workmanship, particularly when considered in the round with the other factors relevant to this issue considered earlier.

79. Apollo acknowledged in its closing submissions that there was " … *a good deal of uncertainty* …" as to its estimate that only 5-10% of the product supplied was implicated in lamination failures. I agree. In my judgment, Apollo's estimate of 5-10% probably undershoots the likely failure rate significantly for the reasons relied on by DIPT. As Mr Woolgar submitted orally, in my judgment correctly, "… *(t)he only thing one can say with certainty is we simply do not know what the rate of failure was as a proportion of the total number of canisters that was sold*". I agree with this submission but would add however that the level of failure that occurred was too widespread and the symptoms of failure too similar to lead to the conclusion that the failures that occurred were the result of workmanship defects. It may be that misapplication that did not cause delamination with other products accelerated failure that would otherwise have occurred in any event when the product was used. There is no evidence that is so. However, that is not the point: the point is that delamination occurred because of a defect in the product. That is the only explanation that on the balance of probability explains the widespread failures that occurred when this product was used, which did not occur when other spray applied adhesives were used by the same operatives in the same applications using the same techniques.

80. In fact, Sanglier did not expect the product to be anything other than easy to use and perhaps easier than other sprayable adhesives – see the evidence of Mr Marshall quoted above – nor did it expect the product to be used in any different way from other spray on adhesives and it was not. In his oral submissions, Mr Fisher suggested that I might conclude that there was something wrong with the product but also that "*... misapplication was, in this case, the straw that broke the camel's back ...*". There is a real difficulty about this submission, however. Causally, the issue is whether the defective nature of the product was at least an effective cause of the failures. If it was, then causation is made out – see Galoo v Bright Grahame Murray [1994] 1 WLR 1360 and the authorities that have followed it. It is only if it could be said that the defective nature of the product was such as merely to create the opportunity for the end users to sustain the loss that, workmanship could in reality be an issue. If that was what was being submitted in my judgment it is erroneous because it ignores the point that (as Mr Woolgar put it in his closing submissions) " … *the DIPT Test Case Contractors had had, in fact, many years of successful results using other sprayable PSAs before they were persuaded to buy PRO33 and use that product instead; and since PRO33 was withdrawn from the market they have used other sprayable PSAs with continued success* …" and that "*... only those DIPT Test Case Contractors who had had the misfortune to buy the AFT/Bostik product in 2011 had any prior experience of significant delaminations, and there is no suggestion that these were the result of any*

failures to use the AFT/Bostik product in a proper and workmanlike manner". In summary, no material failures had been experienced other than in relation to the AFT/Bostik product and the product. In reality, there was no meaningful misapplication or want of care and skill that was causative of the problems that arose. The problems arose because at least some of the product suffered aggressive premature oxidation as a result of either the way it was formulated or the condition of the canisters in which it was packed and but for that would have performed the task for which it was sold when applied as in fact it was applied or would have done so other than in a statistically insignificant number of cases at a similar level to that experienced when other sprayable products were used. What that number was is unknown.

81. I have so far focussed on inherently probability based on the track record of experienced users and have said little or nothing about the product itself. It is common ground that the product consisted of a newly formulated adhesive containing a different combination of ingredients from that used in other sprayable adhesives then available. This is significant because it was only the product that failed when used by operatives in the same way as other spray on adhesives and when no instructions were given to use it any other way. It is common ground that there was a range of other adhesives being used at the relevant time for the purpose of bonding laminates to substrates, without any evidence of the widespread premature failures that occurred when the product was used. This permits of only two possibilities – either operatives employed across a wide range of end users failed to use the product in a proper manner whilst using rival products in a proper manner or the product was defective. The second of these possibilities is obviously and inherently more likely than the first. Moreover, a number of those who used the product gave evidence and there was nothing they said that led me to conclude that they were doing anything when using the product that they did not do when using similar adhesives. I set out some of that evidence earlier when considering whether it had been established that the end users were actually using the product to create the composites that failed prematurely. There was significant criticism about the techniques by Sanglier and Apollo that some operatives used but that is not the point – it is only if they were doing something when using the product that was different from what they did when using other similar products that such allegations become material. As I have said there is no evidence that such was the case.

82. Technical evidence concerning materials failure was given by Dr Wadsworth, Professor Blackman and Professor Parkin. This evidence does not assist in resolving the question whether the product was defective or not. Dr Wadsworth accepted that, as a matter of principle, mis-application of a sprayable adhesive could contribute to delamination via oxidative degradation. He also accepted that if the main route by which oxygen entered the adhesive was at the edge of composites where one would expect preferential oxidation and separation around the edges and that where there was poor coverage of the substrate with adhesive one would end up with gaps, that there would be air in those gaps and 20% of it would be oxygen again contributing to oxidative degeneration. In that regard his evidence was similar to that of Professor Parkin. However, this misses the point. If the same techniques were used by the same operatives, then broadly the same outcomes would be expected whichever spray-on adhesive was used. It is only because of defects in the chemical composition of the adhesive, or the product as a result of contamination in some of the canisters used by Sanglier to package the product, that such oxidation occurred.

83. That widespread failure occurred apparently as a result of premature oxidation suggests very strongly that the problem was not in the manner in which the product was applied but in the chemical make up of the product. As to that, Apollo and Sanglier offered rival explanations, with Professor Parkin for Sanglier blaming the failure of the product on errors of formulation by Apollo, and Dr West for Apollo blaming the failure of the Product on contamination of the Adhesive by manufacturing residues in the Amtrol-Alfa canisters. Thus Professor Parkin concluded that:

> "In my opinion, the use of Dertophene in the formulation was wrong (especially at high concentrations 35% by mass of dry Adhesive) due to its chemical reactivity and doomed the Adhesive to failure due in part to the fact that the Dertophene adds to the alkene bond in the polyisoprene portion of the molecule. Furthermore, Dertophene reacts with itself. In both processes the Dertophene removes itself as a tackifier (or becomes less effective as a tackifier)- reducing the tackifier to rubber ratio and promoting hardening and embrittlement- and eventual failure."

And that:

> "The use of Dertophene in this formulation, especially at high weight percentages, dooms it to fail - the Dertophene even in the presence of Irganox 1010[6] reacts with the alkenes in Vector 4211 - by adding to the Vector 4211 and oxidising (adds an oxygen group) to the alkene."

This is not consistent with failure being the result of workmanship errors other than perhaps that in some cases such errors may have accelerated by a few weeks the failures that would occur in any event. What it does not explain is why the failure occurred in some but not all cases where the product was applied whilst at the same time failing on a widespread basis. Dr West's theory explained that circumstance. His theory was that the cause of the delaminations is the destabilisation of the adhesive within the Amtrol canisters due to contaminant residues from the manufacturing and cleaning processes and that the

> "… reason that not all PRO33 NFA batches resulted in delamination (which I understand to be the case) is because the degree of separation would depend on the level of contaminant residues in the Amtrol canisters. Where there were no or insufficient residues, there would be no or no material separation."

84. Neither of these explanations was consistent with the failures being the result of defective work when the product was being applied. Although Professor Parkin attempted to alter his evidence in the course of his oral evidence to suggest this as an explanation for why failure occurred in some cases but not others, this was entirely unsatisfactory. Given the withdrawal of Sanglier's claims against Apollo, it is not necessary that I go into this in any sort of detail. In summary however, Professor Parkin

[6] A chemical anti oxidant

was faced with the fact (and had been faced with it from the outset) that his theory (as set out in his written evidence) was absolute in its terms and offered no explanation for why there had not been a statistically universal failure of bonds using the material within the time frame that this claim is concerned with. This led him in the course of his oral evidence to suggest that if the Product had been applied properly, it would form bonds that would last 10 years but that the circa 10% that failed, had failed because of misapplication. With great respect to Professor Parkin, I regarded this as a last-minute attempt to explain away what was a real difficulty with his technical explanation that had or should have been apparent from a very early stage and had been highlighted at least inferentially by Dr West's evidence. It is very difficult to have confidence in a last-minute explanation for such an obvious and long-standing difficulty. Although Mr Fisher attempted for understandable forensic reasons to minimise the effect of this change, it was to my eyes a profoundly unconvincing evidential change put forward at the last minute as little more than a debating point to meet an inconvenient truth.

85. The unique contribution made to the materials failure element of this case came from Professor Blackman who conducted what were referred to as peel tests – that is a scientific test to determine the ease or otherwise with which laminates consolidated using the product (or more accurately a version of the product manufactured in 2022) could be separated from its substrate. I echo Mr Fisher's submission at paragraph 54 of his closing submissions that if " … *the peel tests are of limited utility [that] does not entail any criticism of Professor Blackman, who was trying his best to provide something more scientific and tangible for the benefit of the Court than the observational analysis that was undertaken by all three material failure experts* …" The test results were of limited assistance, however. This was so for a number of reasons, of which the most fundamental were materials being tested before the expiry of the whole of the time window within which delamination had been reported, and that a number of samples laminated onto substrates that were of different physical properties to those used commercially by the end users and which involved the application of the 2022 version of the product by hand using a tool known as a "K-Bar". It was common ground that applying the product in this way was likely to result in a much better coverage than spraying, particularly when applied in a lab rather than working conditions. The key point however is that I gained no assistance from samples prepared in that manner because the product was not sold to be applied in that manner, nor applied in that manner by any of the end users.

86. As will be apparent from what I have set out already, I have not felt it necessary to set out and reach conclusions in relation to the evidence concerning application or misapplication in relation to the individual test end users because that evidence does not assist in resolving the major points of substance to which I have referred above. As I have said, even if I reached the conclusion that in some cases that product was not applied in all respects as it should have been, that does not assist in the absence of evidence that those involved in applying the product were doing something when using the product that either Sanglier had instructed them not to do or something different from what they did when using other spray applied adhesives. As I have said already, there is no evidence that supports either contention. As I have also said, I reject the suggestion that the level of failure was no greater than experienced when using other spray applied adhesives for the reasons set out earlier. In those circumstances, I conclude that there was no materially different workmanship practices or failures than would apply when using other adhesives. Given the commercial circumstances, I

conclude that the circumstances in which such failures resulted in delaminations were very low in number. It is impossible to be more scientific than to say that such failures, if they occurred at all, were commercially insignificant.

87. In those circumstances, I conclude that the product was not of satisfactory quality or fit for purpose in that when used as Sanglier expected it to be used delaminations occurred in a period of up to 6 months rather than 10 years or more that could reasonably be expected and that it was this defect that led to the premature lamination failures that led to the claims against the DIPT claimants. I reject the contention that these failures were caused by workmanship defects, which in my judgment merely accelerated what would have occurred in any event.

(iii) The Issues Concerning the Settlements by DIPT

88. There was no significant disagreement as to the applicable principles, which in summary are that:

i) It is not necessary for the claimant to prove on the balance of probabilities that it was or would have been liable to the third parties, nor that it was or would have been liable to them in the amount of the settlements.

ii) Rather, the claimant must show that the defendant's breach of contract caused the losses which the claimant incurred in satisfying the settlements which it made with the third parties, and that those losses are not too remote.

iii) Unless the third parties' claims were of sufficient strength reasonably to justify their settlement and unless the amounts paid in settlement were reasonable having regard to the strength of the claims, the claimant will be unable to show that its losses were caused by the defendant's breach of contract but, unless the claim is so weak that no reasonable party would take it sufficiently seriously to negotiate any settlement involving payment, it cannot be said that the loss attributable to a reasonable settlement was not caused by the eventuality or the breach.

iv) In general if, when a party is in breach of contract, a claim by a third party is in the reasonable contemplation of the parties as a probable result of the breach, then it will generally also be in the reasonable contemplation of the parties that there might be a reasonable settlement of any such claim by the third party.

v) The test of whether the amounts paid in settlement were reasonable is whether the settlements were, in all the circumstances, within the range of settlements which reasonable people in the position of the claimant might have made. Those circumstances will generally include (a) the strength of the claims; (b) whether the settlements were as a result of legal advice; (c) the uncertainties and expenses of litigation; and (d) the benefits of settling the claims rather than disputing them.

vi) Whether the amount paid in settlement was reasonable is to be assessed at the date of the settlements, when necessarily the issues between the claimant and the defendant were still unresolved.

vii) Reasonable settlements are encouraged by the courts particularly where strict proof would be very expensive.

viii) The test of reasonableness is generous, reflecting the fact that the defendant has put the claimant in a difficult position by its breach.

ix) A claim will generally have to be so weak as to be obviously hopeless before it can be said that settling it is unreasonable.

x) Where the settlement is shown to be prima facie reasonable, the evidential burden of proving the unreasonableness of a settlement falls upon the defendant.

See generally: (a) paragraph 56 of DIPT's opening submissions; (b) paragraph 57 of Sanglier's written closing submissions; (c) as to sub paragraphs (i) to (vi) above, Siemens Building Technologies FE Ltd v Supershield Ltd [2009] EWHC 927 (TCC) (2009) 124 Con LR 158 *per* Ramsey J at [80] upheld by the Court of Appeal in Siemens Building Technologies FE Ltd v Supershield Ltd [2010] EWCA Civ 7 *per* Toulson LJ at [29]; (d) as to (vii) to (x) above, 125 OBS (Nominees1) and another v Lend Lease Construction (Europe) Ltd and another [2017] EWHC 25 (TCC) *per* Stuart-Smith J as he then was at [186-7] and (e) further as to (x) above, BP plc v AON Ltd [2006] EWHC 424 (Comm), *per* Colman J, where he said:

> "the fact that the terms of a settlement were entered into upon legal advice establishes, at least, that those terms were prima facie reasonable. It is then for the defendant to displace that inference by evidence to the contrary, by establishing, for example, that some vital matter was overlooked: see Biggin v Permanite [1951] 2 KB 314 per Somervill LJ at page 321. However, the evaluation of the reasonableness of a settlement should not involve the court in arriving at a conclusive judgment on the merits of substantial issues which were contentious in the settled litigation. The court does not need to resolve those issues unless the answer is beyond doubt. The reason for this is that it is testing the reasonableness of the settlement by reference to the perception as to success or failure which the parties would have been expected to hold at the time when the settlement was entered into and the issues remained unresolved: see generally Mander v Commercial Union Assurance Co plc [1998] Lloyd's Rep IR 93 at page 148–149."

It is also worth noting what Toulson LJ said at [28] of his judgment in Siemens Building Technologies FE Ltd v Supershield Ltd (ibid.):

> "It has to be borne in mind that the 'settlement value' of a claim is not an objective fact (or something which can be assessed by reference to an available market) but a matter of subjective opinion, taking account of all relevant variables. Often parties may have widely different perceptions of what would be a fair settlement figure without either being unreasonable. The object of mediation or negotiation is then to close the gap to a point which each finds acceptable. When a judge is considering the

> reasonableness of a settlement he will have in mind these factors and another: that he is likely to have a less complete understanding of the relative strengths of the settling parties than they had themselves (unless he is to embark on a disproportionately detailed investigation), and especially so in complex litigation. The issue which the judge has to decide is not what assessment he would have made of the likely outcome of the settled litigation, but whether the settlement was within the range of what was reasonable."

89. In summary therefore, DIPT must establish that the settlements it reached with the end users were, in all the circumstances, within the range of settlements which reasonable people in the position of the claimant might have made. In arriving at a conclusion on that issue, I bear in mind that the test of reasonableness is generous, reflecting the fact that the defendant has put the claimant in a difficult position by its breach; and that a claim will generally have to be so weak as to be obviously hopeless before it can be said that settling it is unreasonable.

90. DIPT has proved that the product was neither of satisfactory quality nor fit for its purpose. Since the product was sold by Sanglier to the claimants for onward sale to commercial end users, there can be no doubt that claims by such end users up the contractual chain were within the reasonable contemplation of the claimants and Sanglier as a probable result of any such breaches by Sanglier. There is nothing within the surrounding facts as known or that ought reasonably to have been known to the parties that displaces the inference that it was within the reasonable contemplation of Sanglier that there might be a reasonable settlement of any such claims by end users. That is particularly so in a product liability claim of this sort where it was within the reasonable contemplation of Sanglier that the margin made by the onward sale of the product would be modest, that the product would be used by end users for the purposes that in fact it was used and that any resulting claims were likely to be made by many different individual claimants for sums that were likely to be modest and certainly below the level at which it would be economic to dispute them. In fact, as my summary of the end user claims set out earlier in this judgment shows, the individual claims were many in number but in relative terms most were modest in value. This factor was one that the claimants were bound to take into account when deciding whether to contest the claims.

91. For the reasons that I have explained above, I am satisfied that the claimants have shown that breach of contract by Sanglier caused the failures that formed the basis of the claims by and settlements with the third parties including the test end users and thus the losses that the claimants suffered in settling those claims. I have concluded that any workmanship defects were themselves incidental. However, even if this is wrong and I ought to have concluded that a proportion of the failures were the result of workmanship defects that would have resulted in failures whatever adhesive had been used, that proportion would have been small having regard to the level of failures experienced and difficult to detect without expensive and time-consuming investigation but in any event, as I explain below, not known or reasonably left out of account by the DIPT claimants and their insurers at the time when they were negotiating the settlements. In addition, in my judgment the multiplicity of small claims that the claimants were faced with was classically the sort of "*difficult situation"* in which a claimant is placed by a

defendant's breach that justifies a generous approach to settlements. In a case such as this the expense faced by the claimants of litigation at the suit of multiple different claimants based on multiple different customer claims each of which was individually of modest value was almost bound to be disproportionate and thus the benefits of settling the claims rather than disputing them were both obvious and compelling.

92. At the heart of Sanglier's contention that the settlements were unreasonable and thus could not be said to have been caused by its breach of its contracts of sale with the DIPT claimants was the submission that the instructions given to the loss adjusters were so unreasonably circumscribed as to prevent them from negotiating settlements based on causational issues such a defective workmanship. I reject that submission for the reasons that follow.

93. There is one general point that in my judgment undermines that submission. The instructions given to the adjusters were not given by the claimants on their own but by their insurers. Those insurers (and the adjusters acting on their behalf) had an interest in achieving settlements that were as low as possible. It is highly likely that the factors I have referred to above are precisely the factors that an experienced commercial insurer and its solicitors and adjusters would take into account when negotiating settlements such as those negotiated in this case. They are factors that it is entirely appropriate to take into account applying the principles set out earlier. The reality is that settlement cannot be divorced from the cost of disputing claims as those settlements that included legal costs summarised earlier demonstrate. Given the circumstances, an instruction to investigate quantum only was reasonable in the circumstances that prevailed and in particular the evidence of widespread failure attributed to a particular product that could not be explained away as being the result of bad workmanship for the reasons considered at length above.

94. There is no doubt that the adjusters were instructed to focus on quantum alone. It is equally clear that they achieved significant reductions in the claims made by reference to issues like hourly rates and so on as is apparent from a comparison of the total sums claimed against the sums agreed summarised earlier. Indeed, Plumline is asserted to have been driven into liquidation by the settlement that it was able to achieve, though I suspect that the level of settlement was not the sole cause of its demise.

95. The reason why liability was not considered by the adjusters was because as Mr Ward told me in the course of his evidence "(*d)ecisions had been taken previously by the legal team, along with Allianz, to settle these claims*". Although Mr Fisher submitted on behalf of Sanglier that I was " *…entitled to consider how, if at all, that question of mis-application was balanced by Allianz's lawyers as part of the calculus of risk*", that ignores the information that was available to the claimants at the date when the settlements were negotiated. This material must be viewed in the context of what I have said already concerning the widespread and low value nature of the claims being made and the absence of any such widespread failures implicating other sprayable adhesives.

96. By November 2014, DIPT's insurers had instructed solicitors who were in communication with Blu Sky. As explained earlier, Sanglier had sold the product to Blu Sky which sold the product on to DIPT, which then supplied it on to the second and third claimants. The solicitors instructed by DIPT and its insurers wrote to Blu Sky as follows:

"We understand that Dr John Ashworth has now completed his forensic investigations and that these conclude that the cause of the adhesive failures is a manufacturing defect, as opposed to allegations of application error. We assume that you would have seen Dr Ashworth's final test report dated 23 October 2014 which confirms his views.

We can also advise that our clients' forensic experts, Burgoynes, have reviewed the available evidence and concur with Dr Ashworth's findings. It therefore seems to us that there is little doubt that the cause of the product delaminations in this case is due to the defective adhesive.

As we made clear in our letter of 30 July 2014, and in light of the available evidence on causation, we believe that our clients are entitled to seek an indemnity from either you and/or Sanglier, on the basis that you and/or Sanglier were responsible for supplying our clients with the defective products.

As you are aware, our clients have been facing a number of claims from customers who were supplied, and used, the adhesive. Currently, we have been notified of around 50 customers that are seeking compensation for the losses sustained as a consequence of the adhesive failures. Given the advice we have received regarding the defective nature of the adhesive, and in order to mitigate costs, we have advised our clients to take a commercial and pragmatic approach to the claimants' claims and attempt to settle the claims on best terms.

We will be requiring each claimant to provide us with the necessary information and documentation to substantiate their claim, including details of any losses incurred and evidence of the delamination. Once we achieve a negotiated settlement of the claims on best terms, we would seek to recover our clients' outlay from you and/or Sanglier. To this end, and in order to avoid any issues down the line, we would invite you to engage with us to agree a protocol for negotiating the settlement with the various customers, including advising us of what specific information/ documentation you would consider sufficient to enable your principal and/or its insured indemnify our clients.

For the avoidance of doubt, in the event that you do not respond to our invitation, then our clients will have no option but to undertake settlement of the claims on the basis of their assessment of the available evidence and would then seek to recover these costs from your principal's insured, including via legal proceedings if necessary.

We would advise that our clients are coming under increasing pressure from the various customers, and we would therefore

> appreciate a prompt response to the issues raised above. We should therefore be grateful to hear from you within the next 14 days."

As is apparent from this letter, the settlements were being negotiated on legal advice and that advice had expressly taken into account the possibility of workmanship defects as a possible cause, but which had been rejected on the basis of the technical advice then available. Negotiations commenced about a month later, in December 2014. Thus, the claimants had made clear why it was that they were proceeding to settle the end user claims without regard to workmanship errors as being advice from an apparently well qualified expert instructed by Blu Sky that had been concurred with by the expert appointed on behalf of the claimants.

97. Given that the DIPT claimants and their insurers were advised by solicitors, who in turn were being guided by apparently competent technical advice, it is close to unarguable for Sanglier to contend that from a liability perspective the end user claims were so weak as to be obviously hopeless or the claims so weak that no reasonable party would take it sufficiently seriously to negotiate any settlement involving payment or that settlements leaving out of account the possibility that the delaminations or some of them were the result of bad workmanship were outwith the range of settlements which reasonable people in the position of the claimant might have made or there was a vital matter in the form of misapplication that had been overlooked. On the evidence available Sanglier has come nowhere near satisfying these requirements. As Mr Woolgar put it in his closing submissions, on this material " … *it was reasonable for the claimants and their insurers and those instructing me, at that point, to conclude that PRO33 was defective on the basis of the evidence that was available; and there was no reasonable need to conduct any further examinations*." As he added " … *they were taking a reasonable view on what were reasonable materials, following a reasonable examination of the product*". I agree.

98. I have no real doubt that " … *distinguishing between instances of delamination that arose from a failure of the glue on the one hand and those that arose from a failure to apply the Product correctly could conceivably have an impact on quantum* …" but that is not to apply the correct test. It was something I explored with Mr Woolgar in the course of his closing submissions. I am satisfied that it would have been at least arguably wrong in principle for the adjuster to persist in an argument concerning defective workmanship in light of the technical evidence that was then available. There was a serious cost risk in adopting that course which in the circumstances could not be justified. The correct test involves asking whether, in all the circumstances, the settlements were within the range of settlements which reasonable people in the position of the claimant might have made, tested at the date when the settlements were entered into. I am unable to accept that a decision to negotiate settlements quickly by reference to quantum issues alone in the circumstances as they were in December 2014 took the settlements outside that range, in particular having regard to the costs involved in requiring end users to prove liability. Indeed, the point is not one that could credibly be taken given the expert technical evidence then available.

99. It was suggested in the course of Apollo's submissions that I would have to examine each settlement in relation to each end user in order to arrive at a conclusion. In my judgment applying the tests referred to earlier, this is wrong at any rate in a case of this

sort with all the features to which I have drawn attention in this section of the judgment unless it can be shown in respect of a particular settlement that some critical feature has been left out of account. In the end the focus of attention so far as Apollo's submissions were concerned was on workmanship. For the reasons I have explained I do not regard workmanship as causative in the circumstances of this case and certainly that it cannot be said to have been unreasonable to have left that out of account given the state of the technical evidence at the date when settlement was negotiated. Although Professor Parkin sought to advance a technical case that supported the notion of workmanship as being an explanation, he did so only in the course of his oral evidence. As I have explained, I am satisfied that the breach of contract by Sanglier was at least an effective cause of the losses that the claimant incurred in entering into the settlements. More to the point for present purposes a settlement negotiated in December 2014 on the basis of the information then available on the basis that the losses had been caused by defective formulation and not by defective workmanship was well within the range of settlements which reasonable people in the position of the claimant might have agreed to.

100. Mr Fisher was forensically critical of the approach adopted to quantum as well. In relation to settlements negotiated by Mr Odgers for example he submitted:

> "… he was prepared to assert that these figures "sound reasonable", it is very difficult for the Court to assess the reasonableness of these figures without market comparators or to rely on a loss adjuster's opinion (giving evidence as a fact witness) when he hasn't even seen such comparators. In fact in some instances, they were using completely different and inconsistent ceilings for claims. Mr Odgers was applying a 50p per mile maximum to all travel claims whilst Mr Ward was applying one of 40p per mile. "

If Sanglier wished to assert that the quantum settlements fell outside the range of settlements which reasonable people in the position of the claimant might have made, then it was for Sanglier to adduce evidence to that effect from an adjuster or other person qualified to give such evidence that satisfied the tests identified by Colman J in BP plc v AON Ltd (ibid.). No such evidence was adduced. The discrepancy between the travel claim rates does not even arguably take the settlement out the range of settlements which reasonable people in the position of the claimant might have made because it is at best marginal and in any event depend on the particular circumstances.

Conclusion

101. For the reasons set out above, I am satisfied that the claimant is entitled to succeed. Given that Sanglier withdrew its claim against Apollo after the end of the trial, I do not propose at this stage to say anything about the figure for which judgment should be entered because it may well be that the figures opened at the start of the trial will be altered and it may be that figures can be agreed that will eliminate the need for any further hearings in relation to this dispute. In principle however, the DIPT claims are entitled to recover as damages for breach of contract the sums they have paid out in settling the claims made by the test end users.